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Research Institute on Anomalous Phenomena (RIAP) is an independent scientific research body, established in 1992 by the Kharkov-based aerospace company *Vertical* and aimed at scientific studies in the fields of non-traditional energy sources, the problem of anomalous atmospheric phenomena and the SETI (Search for Extraterrestrial Intelligence) question.

We study:
anomalous phenomena.
We consider:
any theories.
We accept:
normal proofs,
exact references.

CONTENTS

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EDITORIAL

THE GIST OF THE MATTER

This RB issue is a purely ufological one. A prominent place in it is occupied by the paper "History of State-Directed UFO Research in the USSR" by Dr. Yuliy Platov and Colonel (ret.) Boris Sokolov. The authors have been for a long time (from 1978 till 1996) involved in organizing and conducting UFO research according to a program sanctioned by the highest authorities of the Soviet Union. The former is a prominent specialist in ionospheric physics, the latter was (until his retirement) a leading official at a big military scientific research institute.

The main result of this program is, to my mind, very essential. It has been convincingly proved that some 95 percent of observations of UFOs "in the broad sense of the word" (that is, objects and phenomena incomprehensible *to the observer*) are due to launches of military and space rockets and weather balloons, whereas some five percent are the "UFOs in the strict sense of the word", that is objects and phenomena whose nature and origin defy any explanation in terms of existing scientific conceptions. This is certainly an important finding, worthy to be broadly promulgated. And certainly, this is the maximum of what could be done under the conditions in which the researchers worked — at a practically zero level of funding and with a very limited number of direct participants.

A new question is however arising in this connection: why was there no further shift towards serious investigations of the "genuine UFO phenomenon"? Generally speaking, anything unknown needs to be explained. One can however suppose that it was the nature and the real magnitude of the UFO problem that played a crucial role in this seemingly unexpected stop. Basically, it is an extra-scientific, *practical* problem, which has faced mankind in the course of its "usual", "everyday" activities. (Scientific problems arise as a result of "scientific activities". But UFOs were neither discovered in a scientific experiment, nor predicted theoretically.) Such problems are, as a rule, solved either in a "simple", practical way, based on ready-made formulae, or with the help of the scientific community. In the latter case society (usually represented by state authorities) charges certain research institutions to study the question in detail and to propose a well-founded solution that can be practically used.

Here the situation is basically the same. The Soviet authorities were for a long time pursuing a rather ostrich policy in respect of the UFO phenomenon. Due to the Petrozavodsk event, they had to pull out their heads from the sand and charge the Academy of Sciences, together with the military, to answer the following three questions: Is the UFO phenomenon indeed for real? If yes, what is it? Can it be in any sense dangerous? The first question has been successfully answered: yes, the UFO phenomenon in the strict sense of this term is for real. (The fact that in any "post-project" publication, the paper in question included, 95 percent of its volume deals with the *explained* part of the phenomenon, is certainly of secondary importance.)

Thereupon it would have been reasonable to move from visual chance observations by — even if experienced — eyewitnesses to instrumental observations. If the objects and processes composing the unexplained part of the UFO phenomenon do objectively exist in the atmosphere and near space, irregular as they are, it is evident that their physical characteristics can be determined only with the help of sophisticated technical means. The latter may include general-purpose equipment (military radars, as well as other surveillance systems) and/or specialized instruments (designed and built specially for UFO tracking), but in any case they must have the ability to monitor — ideally — the whole near-Earth space, say, from altitudes of several hundred meters to a few thousand kilometers.

Why has nobody in Russia ever attempted to develop UFO research in this direction? Supposedly, the answer is simple: too much money and effort would have been needed for this work. One can suspect it was this conclusion that stopped the Russian UFO investigations soon after the existence of the real object of study was at last proved. In the very grave economical situation of the early 1990's Russia simply could not allow herself to allocate the necessary funds for an endeavor comparable in its dimensions with the A-bomb, the first *sputnik*, and the *Apollo* projects.

This solution was probably fairly reasonable. But was it correct indeed? Is the behavior of governments (both Russian and those of richer countries) in this situation responsible in any sense of the word? Science did perform its "initial" task: it has proved that genuine UFOs do exist. To put it otherwise, we can say with sufficient confidence that mankind has met with something unknown in the very area of its existence. To which extent this unknown may be dangerous, remains, naturally enough, unknown as well. To state, for example, that "although we do not know what these objects are, they are certainly not alien spaceships" means to contradict the most elementary norms of logical thinking. In fact, we *cannot* know that genuine UFOs are not

alien spaceships until we *do* know what they are. Further still, as was theoretically substantiated by Michael Hart as far back as 1975, if there exist in the Galaxy any extraterrestrial civilizations, their probes and starships *must* be present in the Solar System.[1] And to state, as did the author of the same work, that UFOs do not exist and therefore there are no ET civilizations in the Galaxy, means to go beyond the limits of *any* logic at all.

In this situation, fraught at least with possible surprises, governmental institutions should exhibit more responsibility than they did in the past. Today, when the existence of genuine UFOs may be considered as proved, it would have been hardly rational to thrust our heads back into the sand or even to continue collecting chance observations of UFOs, both genuine and not. Yes, science is the main (in fact, even the only) cognitive instrument of our terrestrial civilization, but properly to study such a practical problem as the question of the UFOs origin and nature, the research work must be organized in an appropriate manner — as a large-scale (better if international) state-directed research project with the necessary funding and state-of-the-art technical equipment. Ufologists are inclined to veil the real situation and to think that the UFO problem may be successfully solved at the level of amateur groups — that is, mainly with the "strength of brains and enthusiasm", rather than with the "power of money and technology". The reality is however different. Brains are certainly indispensable in any investigation, but the real extent of the quest for the solution of the UFO problem goes far beyond the scope of the potential of amateur organizations or even dedicated scientific research institutions. This is a global task requiring a joint effort of all official bodies and individuals who are responsible enough to seriously think about the future of the human race.

Notes and references

[1] See: Hart M. H. An explanation for the absence of extraterrestrials on Earth. — *Quarterly Journal of the Royal Astronomical Society*, 1975, Vol. 16, No. 2, pp. 128–135.

— Vladimir V. Rubtsov

HISTORY OF STATE-DIRECTED UFO RESEARCH IN THE USSR

Yuliy V. Platov, Boris A. Sokolov

In the mid-1970s in the USSR, enthusiastic amateurs involved in studying the "UFO problem" considerably raised their activity and, as a result, the interest in this problem among the public increased sharply. The UFO controversy became a noticeable phenomenon in the social life of this country, especially among scientists and engineers. Both the texts of the so-called "lectures" that were given by our domestic amateur ufologists, and numerous *Samizdat* materials based on foreign publications, were the subjects of much speculation. The high Soviet authorities, while not encouraging discussions of the problem in the mass media, did not, however, prohibit such lectures in research institutes and other organizations, including military units. It should be noted that these lectures were rather popular and the lecture halls were always full.

The authors of these lectures (most popular were F. Zigel, an Assistant Professor at Moscow Aviation Institute, and V. Azhazha, a retired naval engineer) were basically concerned with the extraterrestrial origin of UFOs, though mentioning sometimes such — not less extravagant — hypotheses as the assumption of underwater or even underground civilizations contacting mankind.

Actually, amateur UFO studies in the USSR at this period of time were reduced just to collecting very inhomogeneous pieces of information about various strange phenomena. The data obtained frequently were of rather doubtful origin, being heavily deformed by long chains of intermediaries, or simply not verifiable. The authors of the "lectures" flatly asserted that the strange phenomena were due to alien activities. In fact, the results of analyses of observational data and measurements at the places of "UFO landings" turned out to be, to put it mildly, incorrect. However, it was the time when in many countries, the USSR included, there was actively developed the SETI/CETI* field of investigations. It was therefore not too difficult to convince the general public of the importance of establishing contacts with our "space brothers".

In the course of time, there surfaced in the Soviet press some publications about observations of extraordinary optical phenomena in various regions of the USSR. There were gradually accumulated in the USSR Academy of Sciences, as well as in newspapers and journals and in private collections, numerous reports describing some strange events. Their authors wished to obtain a scientific or at least reasonable and logical explanation of these "phenomena". The Department of General Physics and Astronomy of the Acad-

* SETI = Search for Extraterrestrial Intelligence; CETI = Communication with Extraterrestrial Intelligence, — *Y. P. & B. S.*

emy of Sciences organized a group of employees headed by V. A. Leshkovtsev, the Learned Secretary of the Department, to work with these letters. The main task of the group was to file the obtained reports, to consult the necessary experts, to analyze the materials, and to answer the letters.

It is natural that such a primitive approach to the organization of this research work could not bring any good results. To launch serious interdisciplinary studies in this field, a strong team of specialists was certainly needed, as well as good contact between the institutes of the Academy of Sciences, the Ministry of Higher Education, the State Committee on Hydrometeorology and, certainly, the Ministry of Defense. Obviously, this research work should have been conducted in tight cooperation with the military.

The so-called Petrozavodsk phenomenon gave a formal pretext to initiate such a project. On September 20, 1977, late at night, inhabitants of the north-west region of the USSR observed (over a period of several minutes) an extraordinary large-scale light phenomenon.

A description of this phenomenon based on the words of the eyewitnesses appeared in the newspaper *Izvestiya*** on September 23 under the title "An Unidentified Natural Phenomenon":

"Residents of Petrozavodsk have witnessed an extraordinary phenomenon of nature. On September 20, about four o'clock on the morning, in the dark sky there suddenly appeared a huge "star" with pulsed beams of light emitted to the ground. The "star" slowly moved towards Petrozavodsk and, remaining poised over the town as a huge "jellyfish", it illuminated all around with a set of thinnest radial beams that gave the impression of a rain pouring down.

After a while, the illumination ceased. The "jellyfish" then changed into a bright semicircle and began to move off again in the direction of Lake Onega, over which area the horizon was shrouded in grey clouds. In this shroud there appeared, as it were, a round hole, bright red in the center and white on the edges. According to the testimony of the eyewitnesses, the observed phenomenon lasted for some ten to twelve minutes.

Y. Gromov, the Director of the Petrozavodsk Hydrometeorological Observatory, told the correspondent of TASS*** that the personnel of the meteorological service stations in Karelia had never before seen any natural phenomena of this kind..."

The numerous eyewitnesses of this impressive phenomenon included representatives of various professions: workers of a first aid team, duty officers of militia,**** seamen and dockers of Petrozavodsk lake port, military men, the airport staff, and even an amateur astronomer. Thus, the fact of the observation by the inhabitants of Petrozavodsk of an extraordinary light phenomenon was more than indisputable.

It was soon found out, however, that at the same time a similar display was observed in the sky in the regions located far from Petrozavodsk, even in Finland (Sodankyla), where some photographs of the phenomenon were taken. It is understandable, therefore, that the phenomenon may be designated as the "Petrozavodsk" one only with some reservations.

It was impossible to simply ignore such an event and the local authorities addressed the Presidium of the Academy of Sciences of the USSR asking for an explanation of the observed phenomenon. Besides, the Academy of Sciences and many newspapers were literally flooded with letters whose authors persistently put only one question: what had happened in the sky above Petrozavodsk that September night? The same question was also asked in official letters from some countries of Northern Europe addressed to the President of the USSR Academy of Sciences. There was expressed concern whether the observable effects could result from some military-technical experiments, being thereby of a serious environmental hazard.

Under the pressure of these circumstances the President of the Academy of Sciences, Academician A. P. Aleksandrov, signed a letter to the government of the USSR addressed to L. V. Smirnov, a Vice-Chairman of the government and simultaneously the Chairman of the Military-Industrial Commission (MIC), with a request to urgently consider a possibility to start a complex research program of investigating anomalous phenomena similar to the "Petrozavodsk" one. The research should broadly involve organizations of the Ministry of Defense and military industry. L. V. Smirnov, in his turn, commissioned one of his deputies, Academician A. N. Shchukin, who was the Chairman of the MIC Council on Science and Technology (CST), to consider at the next meeting of the CST the proposal of the President of the USSR Academy of Sciences. This meeting was held in October 1977, in the Kremlin under the chairmanship of Lieutenant-General B. A. Kiyasov, a deputy of Academician A. N. Shchukin.

Opening the meeting, B. A. Kiyasov briefly stated the contents of Academician A. P. Aleksandrov's letter to the MIC. Essentially, the prob-

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** One of the biggest Soviet newspapers of the time distributed all over the whole territory of the USSR. — *Ed.*

*** Telegraph Agency of the Soviet Union — the main official Soviet press agency. — *Ed.*

**** This Russian term designates the police, not a military force composed of reservists. — *Ed.*

lem was as follows: "The Academy of Sciences of the USSR can neither ignore nor explain the anomalous phenomena similar to that observed in September 1977 in Petrozavodsk and therefore we ask to organize a complex research program of investigating the anomalous phenomena with the involvement of organizations of the Ministry of Defense and the MIC." The members of the Military-Industrial Commission speaking after B. A. Kiyasov supported the proposal of the President of the Academy of Sciences. They noted that the information about observations of extraordinary phenomena did come to organizations of the Ministry of Defense from the military. Sometimes during such events, normal operation of equipment was disturbed.

The final outcome of the meeting was the decision of the Council on Science and Technology to recommend the MIC to include into the State Plan of Scientific Research Works in Defense Fields for 1978 a complex research program "Investigation of anomalous atmospheric and space phenomena, their possible origin and influence on the operation of equipment and on the condition of the personnel". The CST has also recommended to send to Petrozavodsk before the end of 1977 a group of experts, including the military, to unravel on the spot what actually happened in this region on September 20.

The recommendations of the CST were approved by the Military-Industrial Commission of the Council of Ministers of the USSR, and at the nearest updating of the five year plan of research works in defense fields the following two paragraphs were included into the plan for 1978:

"Setka MO" ("The Net of the Ministry of Defense") — "Studies of anomalous atmospheric and space phenomena and their influence on the operation of military technical equipment and personnel";

"Setka AN" ("The Net of the Academy of Sciences") — "Studies of the physical nature and mechanisms of manifestations of anomalous atmospheric and space phenomena".

Thus, in 1978 there started in the USSR a state-directed program of investigating the "UFO" phenomenon that proceeded without interruption for 13 years — until 1990. The meeting of the Council on Science and Technology in October 1977, which played such an important role in setting up this research program, was the first and the last official gathering on the problem with so high level of participants.

Later on, still twice, in 1981 and 1986, the high Soviet authorities approved five year plans of research works in defense fields that included the scientific research work on anomalous phenomena. It should be noted that even after this activity ceased, the Expert Group on Anomalous Phenomena at the Department of General Physics and Astronomy of the USSR Academy of Sciences continued its work up to 1996. The main task of the Group was to analyze the materials coming to the Academy of Sciences from eyewitnesses of strange phenomena. Nowadays such messages are few and far between, but nonetheless they too are evaluated at the Department.

Following the meeting of the Council on Science and Technology in October 1977, some civil servants, including members of the CST, started to display their open interest in the problem of "UFOs" (anomalous phenomena). From time to time they even personally participated in the investigations. Nevertheless, one cannot say that the problem of anomalous phenomena has completely lost its "near-fringe" character. In official documents the abbreviation "UFOs" was not used, being substituted with the term "anomalous phenomena". The preference given to the latter expression was mainly due to the following two reasons: first, the observed effects could be much better described just as "anomalous phenomena" than as "unidentified flying objects", and, second, it was not connected with the hullabaloo around the "extraterrestrials coming to the Earth in flying saucers".

To avoid the excessive public resonance that legalization of the UFO studies could have produced, it was decided to classify this research work. There were at least three reasons for such a decision:

formally, this program was a part of the classified plan of research works in defense fields;

from the very beginning of these studies it was assumed that a great part of the observed strange phenomena were, most likely, of military-technical origin;

some probable properties of UFOs — radar invisibility, high maneuverability, etc. — if proved and puzzled out, could be used for military aims.

Due to the classified character of the studies on this problem, the number of publications in the mass-media was rather limited and it was recommended that a manuscript of any planned publication on "UFOs" should be preliminarily read and approved (this does not imply censorship) in the Academy of Sciences of the USSR.

The decision of the MIC actually led to the creation of two centers of UFO research in this country: one of them in the Ministry of Defense (MOD) and another in the Academy of Sciences. The demarcation line between them passed through the sources of data. The MOD center worked with information coming from diverse arms of the service, and the research work conducted in the Academy of Sciences was based on reports collected in scientific organizations, the State Committee on Hydrometeorology, various newspapers and journals, etc. Certainly, the purposes of the programs were also somewhat different, which can be seen just from their titles. One of the main aims of the military was to

find out how "UFOs" affected operation of equipment and personnel. If found, both the mechanism of this influence and its possible dangerous consequences must have been studied in depth. The Academy of Sciences took over the task of investigating the physical nature of the anomalous phenomena — that is modelling of the processes of the initiation, development and disappearance of anomalous effects, their correlation with physical conditions in the environment and possible anthropogeneous contaminations. Obviously, these research directions partly met and supplemented each other. It was also evident that only joint efforts of the MOD and the Academy of Sciences in the research work could result in fast and correct answers to the raised questions.

One of the central military research institutes in the Moscow region became the leading body responsible for the military part of the program of UFO research. Its Chief, Lieutenant-General V. P. Balashov, a very experienced specialist in the field of studying the impact of the nuclear radiation and other destructive weapon effects on the materiel, was appointed to be the scientific chief of this direction of investigations. To directly conduct the research work, a small group of military and civil experts (in different years it included from four to five specialists) was formed at the MOD institute. As a matter of fact, this group has done the main job of collecting the information about "UFO" observations, its processing and analyzing, and preparation of summary reports. Naturally, apart from the main institute, some other MOD organizations of different arms of the service, as well as scientific institutions of the military industry (about fifteen bodies in the whole) participated in the program as well. The research structure was formed on a purely voluntary basis, and the participation of these organizations in the field-work on identification of 'concrete' "UFOs" was also voluntary — remaining, as a rule, very limited.

Academician V. V. Migulin, the Director of the Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation of the USSR Academy of Sciences (IZMIRAN), a prominent radio physicist, expert in the field of the theory of oscillations, propagation of radio waves and radiolocation, was appointed to be the chief of the "academic" direction of research. IZMIRAN became the head academical body in this field of study. Again, as in the MOD head institute, a workgroup consisting of 4–5 persons was formed to carry on the routine research work. The group was headed by Y. V. Platov. Some other institutions of the Academy of Sciences, as well as those of the Hydrometeorology Committee, and the Ministry of Higher Education became the bodies in charge. Their participation in the work varied from collecting reports on UFO observations to analyzing the material obtained and developing physical models for various kinds of anomalous phenomena.

Budget expenditures for this research program were limited by the salary of the experts engaged in these activities and their travelling expenses. All the means were allocated from the budget of organizations participating in the program and there was no special financing of the research.

It should be noted that the program of investigations of anomalous phenomena was one of the cheapest, if not just *the* cheapest, among the scientific research works in defense fields. The shortage of funds made it impossible to develop or acquire additional specialized equipment, neither to perform certain special experiments. As a consequence, some of these, in particular the experiments on the generation of large-scale plasma formations in air, have not been carried out. The lack of means has also somewhat affected the general method of attack on the problem. It was mainly limited to the analysis of the collected material and development of physical models of the observed phenomena. Only in certain, most "interesting" cases did the researchers visit places of "UFO" observations, and special, "targeted" observations connected with the realization of technical experiments were organized.

Although by the beginning of the work rather a large archive of material on observations of "strange" phenomena had been gathered, only a small part of these reports was subjected to a retrospective analysis. Basically, these were the best documented descriptions of various mass observations of anomalous phenomena. But the main emphasis was laid on the analysis of the reports obtained in the course of the program, as well as on the results of the "targeted" observations.

The research program has been based on the three main principles:

anomalous phenomena are an objective fact requiring a scientific explanation;

a priori solutions of the problem cannot be accepted as truthful;

only long and deep studies of these phenomena can lead us finally to the truth.

Even though at the beginning of our work we tried to avoid bias in favor or against any hypothesis on the nature of "UFOs", some theoretically possible versions of their origin could be considered as preferable:

"UFOs" are a product of human activities, that is these phenomena are of anthropogeneous origin;

"UFOs" stem from some natural processes occurring on the Earth, in the terrestrial atmosphere, or in near space — the hypothesis of a natural origin of anomalous phenomena;

"UFOs" are associated with extraterrestrial civilizations.

The latter version, though the most intriguing

and sensational one, aroused no enthusiasm among the researchers. However, it would have been improper to refrain completely from its consideration.

The key-note in the organization and fulfillment of the military part of the program was introduced by a document prepared by the MOD body in charge of the program and authorized in January 1980 by the Chief of the General Staff of the Armed Forces of the USSR. This document, which reached all the Soviet troops in the form of a Directive of the General Staff, contained the instructions concerning all the main problems in the realization of the scientific research program. Namely:

It determined one of the central military-research institutes of the MOD as the body in charge of the program, designating it as a Center for collecting, processing and analyzing the "UFO" information obtained by the military.

It determined the military research institutes to be responsible for the fulfillment of the program in all five arms of the service and the order of their interaction with the central research institute responsible for the fulfillment of the program in the whole.

It determined the order of obtaining by the central research institute (the body in charge of the program) of the information needed for the identification of "UFOs" from different arms of the service, first of all the data on launches of military and space rockets.

It determined the rules of documenting the facts of "UFO" detection by the Armed Forces, specified the order of the message presentation depending on the urgency and importance of the information contained.

This Directive has actually allowed the researchers to use all the great observational potential of the Soviet Army for the fulfillment of the program. Each military man, wherever he was, became its potential participant, since in case of observation of any inexplicable, exotic, extraordinary phenomenon he was to report about it in a written form in conformity with the established rules, and present these materials to his chiefs. One can say that this Directive put the Armed Forces for a period of thirteen years on duty observing anomalous phenomena in areas where the troops were stationed, that is practically on the whole territory of the USSR. As is well known, this was as much as some one sixth of the dry land of the whole planet. Hardly anybody else could ever have organized another research program of this kind and scope, having practically no funding.

There were specified two channels through which information about "UFO" observations was to be transmitted to the central research body. The routine one was in use when the observed phenomena did not affect the normal functioning of the military unit. But in case of emergency, that is when the development of anomalous phenomena was, for example, accompanied by malfunctioning of technical equipment, the information on such events was directed to the center very urgently, bypassing all intermediate procedures.

In the institutions whose research activities in this field were coordinated by the Academy of Sciences ("civilian" ones – as opposed to those subordinate to the MOD) observational material was also collected, even if not on such a large scale as in the MOD. In the first place, here should be noted a great contribution that was made both to the organization of observations for anomalous phenomena, and to the analysis of the material collected, by the Institute of Applied Geophysics of the State Committee on Hydrometeorology. The main emphasis in the activities of civilian research bodies was laid on the analysis of conditions of observation of anomalous phenomena and their physical mechanisms. The experts in physics of atmosphere, physics of plasma, geophysics, geochemistry, mathematics, and other fields of science took part in this activity. As a result, there were created all the necessary prerequisites for collecting a considerable amount of information about various anomalous phenomena, its objective analysis and development of an adequate model of the observed phenomena.

In the course of the program fulfillment (over thirteen years), about three thousand reports describing extraordinary phenomena were obtained. Practically all of them were analyzed and identified by a small group of researchers. The main part of these reports falls into the category of mass observations, that is situations when many independent eyewitnesses describe the same phenomenon. On the average, one can speak of a 'mass' observation when there are from seven to ten reports about the same episode. In separate cases, when observations were made under special weather conditions, the phenomena lasted long enough, etc., the number of the reports reached 50 and more. Thus, on the whole, more than 400 events were recorded and categorized as extraordinary or anomalous ones. It is interesting that from the military units operating on or near test rocket launch sites and proving grounds, scarcely any reports about "UFO" observations came. Obviously, this is due to the fact that the effects accompanying military-technical tests and experiments are well known to the experts engaged in these works, but puzzle the people who are unaware of this kind of human activity. Such people perceive these phenomena as anomalies of a sort.

As mentioned above, the relatively small number of phenomena classified as anomalous ones is most probably due to the fact that before the

reports were forwarded to the center, they were checked by specialists at the places of observations. As a result, the majority of them were rejected on the spot.

Practically all mass night observations of "UFOs" have been unambiguously identified as the effects accompanying rocket launches and aerospace tests. Such an identification included the determination of time coincidence between the observation of the phenomenon and the corresponding test, space correlation of the possible place of the phenomenon formation with the operation region of the technical systems that were tested, as well as correspondence between the modes of the operation of the latter and the observed patterns. It should be noted that the effects accompanying launches of space rockets can be observed at a significant distance (thousand of kilometers and even in other regions of the globe) from the place of the launch. This is connected with various modes of operation of the rocket engines and firing of the propulsion systems of space vehicles for orbital correction.

The main mechanism of the development of this class of anomalous phenomena consists in scattering of solar light by the gas-dust cloud formed by the combustion products of the rocket fuel. Thus, the most favorable conditions of observation of such effects are under twilight, when the path of the rocket goes through the region illuminated by the Sun and the observer is on the night side of the Earth. Depending on the altitude of the rocket flight, engine design, composition of the propellant components etc., the outlines of the gas-dust cloud and its size can broadly vary. It is enough to say that in some cases the characteristic cross-section of the rocket trail can reach many hundreds of kilometers. It is no wonder that an extraordinary picture observed over a vast territory (since these phenomena are developed at the altitudes more than one hundred kilometers), the absence of any sounds and other "strange" details can perplex and astonish the unprepared observer.

Among the most interesting manifestations of the "rocket effects" one can note the above-mentioned famous "Petrozavodsk" phenomenon provoked by the launching of the artificial satellite *Kosmos-955* from the Plesetsk launching site. (A number of "additional" effects accompanying this phenomenon was connected with a failed attempt to launch a ballistic rocket. The latter was tested in the same region and practically at the same time.) The mass observation of the "dolphin-shaped" object that was seen in the sky on the vast territory of the European part of Russia on the night of June 14–15, 1980, was due to the launch of the satellite *Kosmos-1188* from Plesetsk. It is interesting enough that in less than an hour this satellite left its traces in another region of the globe, namely, South America. In Russia, there was observed the gas-dust trail left by the main engine of the booster rocket, and in South America a cloud connected with the work of the rocket engine of the kick stage placing the satellite into its final orbit. Just as much, the phenomenon observed on May 15, 1981, was connected with the launch of *Meteor-2*; August 28, 1982 – the launch of *Molniya-1*; July 3, 1984 – *Kosmos-1581*, etc. In a number of cases observations of anomalous phenomena were due to launches of ballistic missiles, both sea- and land-based, not satellite carriers. By the way, such phenomena accompanying test launches of ballistic missiles from American submarines were fairly regularly observed in the oceans – specifically, near the Canary Islands. Hence, such "UFOs" are international in character. It is apparent that these effects do not differ basically from the "satellite" ones, but their identification is more time- and labor-consuming, since the launching positions and precise times of military launches are rarely known with sufficient accuracy.

The second most important class of phenomena perceived by eyewitnesses as "UFOs" corresponds completely to the term "flying objects". To tell the truth, here one should however make a small remark – these objects are not flying, but rather "floating" or "drifting" in the atmosphere. This class of anomalous phenomena includes the effects accompanying launches of weather balloons.

To study various atmospheric layers, as well as to carry out regular meteorological observations, sounding balloons are widely used all over the world. A modern sounding balloon has a rubber envelope about two meters in diameter at ground level, from which a set of measuring instruments is suspended. Sometimes they can climb up to 30 kilometers or so, where the diameter of the balloon increases up to almost ten meters. These sounding balloons are launched quite regularly, their flight range usually does not exceed 10–15 kilometers from the starting point. Therefore, as a rule, their observations do not evoke any bewilderment. However, from time to time there occur some surprising incidents. The following episode took place on June 3, 1982, in an air defense fighter regiment stationed near Chita in Transbaikalia. It started when the Air Defense National Center got an urgent report from the regiment informing the headquarters that while patrolling the state frontier between the USSR and China a fighter pilot has detected, at an altitude about 17 km, an extraordinary ball-shaped object. He prepared to attack it, but at that time the object unexpectedly disappeared. The report stated that the detected spherical object could not be a meteorological balloon, since such balloons are well known to the personnel, they are less in size than the observed object and never climb to such altitudes. The region in which the airplane encountered with the "UFO" was

practically uninhabited, except for a frontier post and meteorological station; it was decided to start checking with the latter. From the telephone talk with the chief of the meteorological station it was found out that, first, the launch time of a sounding balloon from this station almost coincided with the time of meeting the unknown object by the fighter pilot, and second, the envelope of the launched balloon turned out to be very strong and it climbed a few kilometers above its usual ceiling. According to the telemetric data, its last known altitude was 16 km.

A similar incident took place on September 13, 1982, in an air-defense regiment stationed on the Chukchi Peninsula. Again there was an encounter of an airplane with an unknown spherical object at an unusually high altitude in the region of the Gulf of Anadyr and an unexpected disappearance of the object. The difference between this case and the former one consisted in the fact that the meteorologists did not know what altitude was reached by the sounding balloon they had launched, as the telemetric equipment failed at the very beginning of the flight. It is quite possible that both these balloons with unusually strong envelopes belonged to the same "defective" batch.

The described episodes show that even experienced pilots are not immune from errors when evaluating sizes of the observed objects, distances to them, and their real nature.

To explore physical conditions in the upper atmosphere, there are used more "serious" balloons that are many times larger than meteorological ones. These can drift for a long time at altitudes more than 40 kilometers above various regions of the globe. The record flight duration, achieved in 1970, exceeded four years, during which a high-altitude balloon made more than one hundred round-the-world trips at an altitude about 35 kilometers. Apart from the classical ball-shaped (or, to be more correct, *tear-drop*-shaped) balloons, some having rather surprising forms are also in use. For example, in France, due to use of a relatively simple manufacturing method, there were produced envelopes which looked like a regular pyramid — a tetrahedron. When, in one case, a crew filming in the Baltic observed a flight of such a balloon, it aroused sheer panic among the eyewitnesses. In some cases twofold balloons are used that take at large altitudes the shape of a "doll". The volume of tetrahedral balloons can reach 150,000 cubic meters corresponding therefore to the characteristic size about 110 meters. Spherical balloons of the volume of 500,000 cubic meters and the diameter up to 150 meters are even more impressive. It is easy to calculate that even a medium-sized balloon, being observed from a distance about 100 kilometers, can be seen in the sky as a detectable object, its size being about two angular minutes (some 1/15 of the diameter of the full Moon). The proportion of such "UFOs" is however less than that associated with the effects of rocket launches, and accounts for twelve percent of the total number.

For all the thirteen years of fulfillment of the program of the anomalous phenomena research there were just a few cases when, instead of a routine retrospective or operative analysis of the observational materials, it was necessary to make an urgent investigation of the circumstances connected with the observations of "UFOs" and their probable influence on activities of military units. In all these cases, the reports about the "UFO" observations reached the chief research body not by the usual courier service, but in the manner stipulated by the urgent report sheet — that is, by immediate notification of both the MOD research body and the highest military authorities. The authors of this paper also participated in investigations of these events.

The first episode took place on October 5, 1983, in a missile division stationed near the town of Khmelnitskiy in the Ukraine. That day, from 18 o'clock till 22 o'clock, many military personnel and members of their families (some 50 persons in all) were observing an unknown colorful light phenomenon. It looked as follows: in the north direction, high above the horizon, there occurred for several minutes, every now and then disappearing and reappearing, some bright luminous objects that had the shape of an airship. Some of the eyewitnesses stated that they could see on these objects dark window-like spots emitting arc-shaped light beams that reached the ground. The described event, though impressive enough, would not have become a subject of an urgent report to Moscow if it were not for one accompanying circumstance. The point is that during the observation of this phenomenon in the sky, on the control desk of the command post of the division a supervisory panel gave out a warning of a fault in the start-up system of the missiles. A few tens of seconds later, the warning light went out, as spontaneously as it had lit up, although the missile combat crew still had some doubts as to the operation of the equipment. In this situation the commander of the division decided to report promptly to the command center of the General Staff about the short-term fault in the operation of the equipment at the command post of the division. The commander associated this fault with the appearance of the unknown luminous objects in the sky *above* the division's position.

The Chief of the General Staff, having acquainted himself with the report, ordered a special commission to be urgently sent to the place of the incident. There must have been among its members also experts in the field of anomalous phenomena. The commission started its work in

the morning of October 6. Two hours later, it became clear what was observed by the missilemen and members of their families in the evening of October 5. Having questioned the eyewitnesses it became possible to determine the direction in which the strange phenomena were observed — practically to the north from the division's position. The first serious potential "UFO-source" turned out to be a test range of the 26th Air Force army situated in Byelorussian Polesye, approximately 400 kilometers from the place of observation. After making an inquiry to the Command Center of the Air Force it became known that on this test range, just at the time when the "anomalous" light phenomena were observed, pilots were practising dropping air bombs by the light of parachute flares. The parachute flares were dropped from the airplanes at an altitude of about 10,000 meters, then they descended while illuminating a large area during 5–7 minutes. It was these light effects in the night sky above the Byelorussian aviation test range that were observed by the military men of the missile unit separated from it by a distance of 400 kilometers. In fact, parachute flares were used at this test range several times a year (both in the preceding and following years), but only once — on October 5, 1982 — were these effects observed so far away. The horizon line for the observers passed above the test range at an altitude of more than 12,000 meters, thus the whole trajectory of the flares' motion and the associated light phenomena remained completely "below the horizon". This fact proved to be very important and interesting, since it suggests that under certain conditions (probably, very rare ones) there can develop in the atmosphere the effect of superrefraction.

It should be added that the fault in the operation of the command post equipment had nothing to do with the observed phenomena. They coincided in time by pure chance. However, just this combination of events was the main reason for an urgent investigation of the incident.

The next episode covers, even though with a touch of reservation, a number of accidents that happened in the years 1984–1987 to airplanes that were stationed on airfields near the town of Borisoglebsk (Voronezh Region). A characteristic feature of these accidents was the presence in the flight zone of an unknown object detected by radars and visually observed by some pilots from their cockpits. The chief of the Borisoglebsk Air Force Flight School that suffered most from the accidents personally asked for experts familiar with the problem of "UFOs" to be included in the commission of inquiry. Up to now, there is no consensus of opinion as to the role played in these accidents by the mysterious objects observed in the flight zone, and therefore we shall consider these events as unexplained.

In the above, we have presented only two the most important causes of "UFO occurrences": rocket launches and flights of high-altitude balloons. Actually, these causes can explain the major part of the observed phenomena (more than 90 percent). There is no doubt, however, that the proposed models are not the only conceivable ones and we are far from the intention to equate the scheme of development of the *majority* of the observed strange phenomena with *all* possible mechanisms. To build a sufficiently complete picture of the "anomalous phenomena", one needs to develop hypotheses as diversified as the observed phenomena themselves.

The results of our research work have shown that the great majority of effects regarded by eyewitnesses as anomalous have in fact quite a mundane explanation. These effects are mainly associated either with technical activities of mankind that have been gathering force in the recent decades, or with rare forms of natural phenomena. In the course of these investigations, a large amount of data on "UFOs" has been collected and analyzed, and physical models have been developed for various kinds of these phenomena. The results have been partly presented in Refs. 1–3.

It is, however, not the identification of the greater part of the observed phenomena, neither the development of their physical models that are the most important results of the research, even though very interesting results have been obtained in these directions. The most surprising is the fact that, in sharp contrast to the numerous descriptions of various contacts with aliens collected by ufologists, there has not been obtained, despite the great observational potential of the Armed Forces and civil organizations that were involved, anything of the following varieties:

reports about UFO landings;

reports about contacts with "UFO pilots";

reports about abductions of humans by "UFOs".

This could mean either that the territory of the USSR was, due to some reasons, closed for alien visitations during at least thirteen years — or that the hypothesis of the extraterrestrial origin of "UFOs" is wrong. Any serious UFO investigator should, at least, take this result into consideration.

The attitude to the problem of "UFOs" can vary from the excitement at the thought of possible contacts with extraterrestrial civilizations, to the very denial of the reality of these observations. The outcome of the above work has shown that the truth, as often, is in the middle. Many people are eyewitnesses of strange things that cannot always be firmly identified with any known natural or anthropogeneous effects. But the share of such observations in the whole set of "UFO" reports is very insignificant, and from this does not at all follow even a "hint" on possible interference by extraterrestrial forces in our life.

In conclusion the authors would like to express their gratitude to all the observers of anomalous phenomena who made it possible to pursue this research program. We would also like to emphasize the great personal contribution of Academician V. V. Migulin and Lieutenant-General V. P. Balashov to the organization of the research work and scientific management of the project. A very active part in this work was taken by Prof. N. V. Vetchinkin, Dr. S. A. Chernous, Dr. A. A. Plaksin, Dr. A. A. Abdulin, Dr. V. V. Rubtsov, Dr. B. A. Feshin, Dr. N. K. Pereyaslova, G. N. Kulikova, as well as many other specialists. Unfortunately, we are not able to mention all of them here. We are also grateful to our foreign colleagues for stimulating and helpful contacts.

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RB-36H NAVIGATOR DESCRIBES 1956 DAYTIME UFO CLOSE ENCOUNTER

R. F. Haines, F. Carter

Date: fall or winter 1956.
Time: approx. 12:15 p.m. local time.
Duration: 8 minutes.
Location: northern South Dakota, USA.
Class: UM (USA/military aircraft).
No. witnesses: approx. 20+.
No. UFO: one.

A U.S. Convair Air Force RB-36H (Peacemaker) airplane[1] of the 718th Squadron, 28th Strategic Reconnaissance Wing based at Ellsworth Air Force Base, Rapid City, South Dakota, had taken off before noon with a nominal crew of twenty two men (seventeen regular flight crew and a five-man relief crew). The commander was Lieutenant-Colonel Lenny Marquis. Their mission was training in the use of various air-to-ground cameras and other military surveillance equipment. America's Strategic Air Command operated ten wings of B-36 bombers at this time with about thirty aircraft in each one. Type RB-36H was the photo reconnaissance version of the B-36H. This was a huge aircraft (also nicknamed "the Aluminum Cloud"), with its 230 foot [70 meter, — *Ed.*] wing span, powered by six each 28 cylinder Pratt & Whitney R-4360 piston pusher engines mounted on the trailing edge of each wing and two pairs of J-47-GE-19 turbojet engines mounted outboard of them.

The date of this sighting was late in 1956 as America was finally getting over the aftermath of the Korean Conflict while also facing a growing "cold war" with the Soviet Union. The huge, ten-engine, heavy bomber climbed to about forty thousand feet [12,200 meters, — *Ed.*] altitude in clear air. The time was shortly after noon.

According to the main eyewitness Jimmie Lloyd (USAF, then Lieutenant, now Lieutenant-Colonel, retired), the airplane was cruising in straight and level flight at about 435 miles [700 km, — *Ed.*] per hour, near its top speed of 450 miles [725 km, — *Ed.*] per hour at cruise altitude. Its six retractable and remotely controlled gun turrets[2] were in the stowed position. Details of its huge, high resolution camera are found elsewhere.[3] Suddenly the left scanner in the aft compartment saw a metallic disc about one hundred feet [some 30 meters, — *Ed.*] across fly toward the airplane from its left-hand side and take up a fixed position off the left wing less than 300 feet away [some 90 meters, — *Ed.*].[4] He reported it over the intercom system and soon the visitor's arrival was known by everyone on board. Many men rushed to the nearest porthole on the left side of the fuselage and began taking 35-mm photographs of the disc using their standard-issue cameras.[5]

The object seemed to have an almost flat or slightly concave bottom surface. Its vertical sides were populated by many separate round sources of light, each of a different color. Their spacing was approximately as shown in Figure 1. The length to height ratio of the UFO was about 8:1 and a low dome, about one-third the length of the object, was located at the center of the top surface which was only slightly curved. The surface of both the main body and raised dome appeared a "light golden" hue. The dome had three round openings or light sources approximately as shown here. Its surface was perfectly smooth and was without seams, markings, any visible means of propulsion or other aerodynamic details.

After between five to eight minutes the UFO suddenly accelerated[6] horizontally in parallel with the RB-36H and then rose at about thirty degrees above the local horizontal without pitching up or down. All of the peripheral bluish lights be-

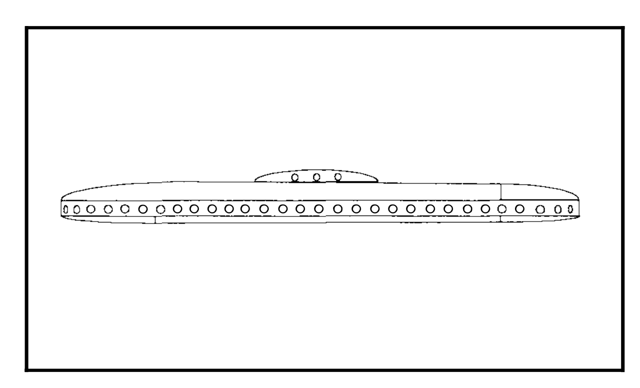


Fig. 1. Approximate side view outline of UFO seen from the RB-36H

came much brighter and definitely greenish as it accelerated away out of sight in several seconds. The object did not appear to rotate about its vertical axis nor did it appear to wobble or undulate in flight. In addition, no buffeting or unusual noises were felt or heard by Lieutenant Lloyd during this sighting. Flying at 435 miles [700 km, — *Ed.*] per hour, the UFO and airplane would have traveled a distance of about 58 miles [some 93 km, — *Ed.*] during this eight-minute period.

Lieutenant Lloyd was serving as a substitute navigator in the nose of the aircraft at the time. He recalled that they were somewhere in northern South Dakota and probably near the state line with Northern Dakota. At this time, he held five specialty ratings (primary, photographic, radar, weather, and electronic countermeasures).

The radio operator used a preassigned frequency on his single sideband radio to contact ground authorities about the UFO which would soon depart. Lieutenant Lloyd told us that ground radar was able to detect the UFO as well as the airplane. Later he wrote: "When we got on the ground, we had to turn in all of our logs, equipment, photographs, everything, to an intelligence unit called 'Reci-Tech' (stands for *Reconnaissance Technology*) which was the central processing unit for the whole wing. We were debriefed by Intel officers, reminded that we all held top-secret clearances, and that we couldn't reveal any of this information for a period of 12 years. Then, several weeks later, we were debriefed again by some officers from higher headquarters who reminded us also of the same 12-year period, and in fact, when I was discharged back in 1960 from the active Air Force into the active reserves, I was also reminded *again* of the 12-year period to not reveal any of this information."[7]

Discussion

This rather typical high altitude close encounter of a military airplane with a UFO involved a single, three-dimensional, symmetrical aerial object that was witnessed and photographed by many highly qualified airmen and officers. It is instructive to apply our knowledge of terrestrial

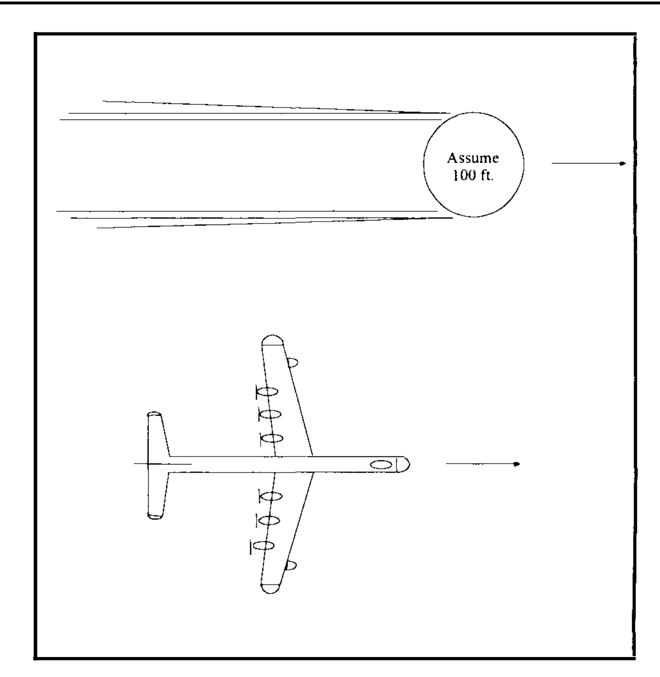


Fig. 2. Plan view of UFO next to RB-36H relative to probable wake turbulence from the disc's edges (not drawn to scale)

aircraft design to this object to try to better understand its most likely physical characteristics. We will begin with its weight.

Airframe weight. Terrestrial aircraft typically employ a standardized construction involving smooth sheet metal attached to ribs and longitudinal spars (generally referred to as a "monocoque" construction). It can be noted that this particular construction design yields an almost linear relationship between aircraft "wetted" area (total outer surface) and structural weight (with no engines, fuel tanks, interior fittings, or cargo).[8]

An approximate wetted area of 15,000 sq. ft. [some 1400 square meters, — *Ed.*] approximates the present UFO. This results in an estimated airframe weight of about 110,000 pounds [some 50 metric tons, — *Ed.*]. Without knowing its interior components it is not possible to estimate its gross weight. If gross weight were known, one could better estimate the total horsepower required to propel the object at 435 miles [700 km, — *Ed.*] per hour.

Wake turbulence. When aircraft travel through the air they typically produce invisible air turbulence behind them. The white condensation trails sometimes seen behind jet aircraft flying at high altitudes are produced by rapid heating of moist air from the heated engine exhaust. These contrails provide useful insights about these highly unstable zones. Vortex zones are initially spread out for from one to two seconds after leaving the wings' edge and tips. For the next two or three seconds the vortex effect remains together (i.e., retains its compactness), but loses from 60 to 80 percent of its capacity to roll another aircraft passing through it. A downwash effect persists, however. It also maintains an

almost constant volume (cf. the parallel lines behind the UFO in Figure 2). After about five or six seconds the turbulent area begins to break apart into separate cross-trail pillows. When one reaches a point some three to five minutes behind the object there is almost no coherent rolling moment remaining.[9] Other useful information on wake vortices is found elsewhere.[10] It is also known that if this UFO were moving through the local airmass with zero pitch angle, i.e., with zero angle of attack, no wake vortex should be formed behind it. This is indeed supported by the fact that no air turbulence was recalled by Lieutenant Lloyd on board the RB-36H aircraft. It would be educational to view the photographs which were taken to see if condensation trails were present.

The fact that the UFO was able to fly much faster than the RB-36H and climbed without changing pitch angle suggests some type of gyroscopic attitude stabilization system.

Strouhal shedding number. This dimensionless number (S) represents "aperiodic" air flowing alternately over the top and then the bottom surface of a symmetrical solid while it travels through the air. In essence, S represents an unsteady shedding of a Von Karman vortex street.[11] For aircraft with a high Reynolds number, S is approximately 0.21 (used here). The present UFO was approximated by a 12.5 foot [3.8 meter, — *Ed.*] diameter cylinder with its longitudinal dimension moving normal to the direction of travel. Thus:

$$S = nd/V_0$$

where n = shedding frequency (Hz), d = object diameter (ft.), and V_0 = velocity relative to the local air mass or 435 miles per hour (638 ft./sec.) [700 km per hour, or some 194 meters per second, — *Ed.*]. Solving for n we find:

$$n = SV_0/d = 0.21\ (638)/12.5 = 10.7 \text{ Hz}$$

According to this calculation, one would expect a vortex street flowing alternately (first) over the upper surface and (then) the lower surface of the UFO approximately eleven times a second. Whether this effect could result in some kind of visible or audible effects remains to be seen. However, UFO investigators are urged to seek such data in other similar cases.

Aerodynamic drag and structural considerations. The total frontal area relative to the local air mass of a 100 foot [30.5 meter, — *Ed.*] diameter having the cross sectional shape shown in Figure 1 would be about 1,250 square feet [some 116 square meters, — *Ed.*] at zero pitch angle (i.e., minimal silhouette). Of course, drag would increase, relative to the air mass, if its angle of attack increased.

If the UFO was constructed using a terrestrial-based monocoque construction it would undergo various bending moments as a function of g loading (constant earth gravitation effect plus accelerative forces) during turning. On the other hand, if the means of propulsion of the UFO incorporated a mechanism where each micro-element (perhaps at the molecular level) is integrally involved in propulsion and properly coordinated in the same vector and acceleration level, then the UFO's entire body would act as a single point mass. The implications of moving a point mass simplify some of the consequences while making others more complex.

The paucity of data in this case prevents us from saying much more about the possible physical characteristics of this UFO. Interested readers are urged to write to us (using the editor's address for this publication).

Notes and references

[1] See: Anon., *Convair B-36*. 2000 Aerospace Publ., Ltd., 1997. http://194.205.16.17/ency/B/B-36.asp; U.S.A.F. *Convair RB-36H "Peacemaker"*, http://www.wpafb.af.mil/museum/research/bombers/63-83.htm

[2] Each turret had twin 20-mm cannons. Two more 20-mm cannons were mounted in the nose and two more in the radar-controlled tail turret. This reconnaissance version of the B-36 with guns was referred to as "Fetherweight II".

[3] See: U.S.A.F., *RB-36 Reconnaissance Camera*. http://www.wpafb.af.mil/museum/history/postwwii/rb36.htm.

[4] The witness said later (October 5, 1998, to author RH) that "the entire object would have been covered by my closed fist held and viewed at arm's length." This would make the UFO subtended an angle from the nose of the airplane of almost 10 degrees of arc!

[5] Haine 35mm format cameras were used. Everyone also had a pair of binoculars and a standard UFO reporting form developed for Project Blue Book.

[6] The duration of the UFO's visible acceleration lasted approximately one to two seconds at the most.

[7] Part of this fascinating account was recorded by author Franklin Carter in July 1998. It is clear that Air Force officials wanted to keep this sighting completely under wraps for some reason.

[8] Smith, B.E., Ames Research Center—NASA, *Personal communication.*

[9] Rossow, V. J., Ames Research Center—NASA, *Personal communication.*

[10] See, for example: Olsen J. H., Goldberg A., Rogers M., eds. *Aircraft Wake Turbulence and Its Detection*. New York: Plenum Press, 1971.

[11] Cf.: Daily, J. W., Harlman, D. R. F. *Fluid Dynamics.* Reading: Addison-Wesley, 1966, p. 381.

A PILOT AND A UFO

From the Editor: A UFO report published in the popular press only rarely has any value in itself (the number of such publications may be a sign of a UFO flap, though). But sometimes there occur exceptions to this rule, one of which has drawn our special attention. The Russian monthly **Sovershenno Sekretno** *(Top Secret) has published in its No. 5 for this year (Ukrainian edition) a rather detailed report of* ***Valeriy Menitskiy****, a renowned Russian test pilot, Lenin laureate and Deputy Designer-General of the famous MIG firm, about his UFO observation. What follows, is a summary of the most essential parts of the article. We hope that the info will be of interest to RB readers.*

What are the main characteristic features of my UFO case? This was my first experience of this kind and I cannot say I have a good understanding of it. The specialists whom I consulted in this connection did not reveal all the information they possessed either. What is more, immediately after our talks they closed for me any access to this subject. Well, I would still have comprehended this if they had talked to me and, in answer to my information, had shared their own estimations and opinions, then binding me to secrecy. After all, I am a loyal citizen working in this system for many years, and am well aware of how state secrets must be guarded.

Now, let's get to the point! We were testing a 35-mm naval gun that was to be installed in the MIG-27 fighter-bomber. This gun is a powerful weapon, its rate of fire being 6000 rounds per minute. Some initial problems were cracked and the tests went on successfully. There remained only two final flights, in the first of which it was planned to fire three successive long bursts of 75 shells each.

Having just taken off, I heard that the flight supervisor ordered all pilots to return to the base, since the radar detected in the region of the aerodrome a foreign object. I had some 1500 liters of fuel aboard my plane and the flight supervisor asked me if I could approach the object that remained stationary in our flight zone and to find out what it was. Supposedly, the object was a sort of weather balloon or something like that. The command center gave me its exact coordinates and directed me to the target.

Soon I saw in front of me an object of steel-grey color, resembling an oil-stove. Then I made a sharp turn to the right, intending to further take the target from the left.

As I was approaching the object over again, I could not however detect it for some time. This was strange indeed, since I had never had any problems with detecting airplanes and other flying objects. At a distance of seven kilometers I shifted my gaze to the right – even though, in principle, the target should have been situated to the left. And now, there it was! Passing by it at a relatively short distance, I had an opportunity to examine the target in some detail. It was a cylindrical object with a spherical upper part and a truncated cone below. On its surface there were seen straight lines resembling ribs. [See the sketch in the center of this page, – *Ed.*]

Though the object looked rather unusual for a NATO balloon, I decided it was a device of purely terrestrial origin having inside, most probably, some spy equipment. However, being low on fuel, I had to land my MIG.

On the ground, I was immediately surrounded by the "special authorities", as we used to call them. I was actively questioned: what had I seen and what was it, in my opinion? More than once our pilots met in the air with unidentified objects and reported these encounters, but the radar systems did not "see" anything. Or quite the reverse, the objects were detected by radars but not visually.

Then, while still standing on the airfield, I decided to bring the object down. Since it had come to our air space without the sanction of the proper authorities, this was certainly permissible. According to the plan of my next flight, I should have fired a volley of 300 shells; why not seize this opportunity? Some senior officers supported my intention. But General Alexander Bezhevets warned me against such an action.

Having somewhat calmed down, I also looked at the situation differently and made up my mind to postpone the final decision until I approached the object again.

However, when taking off, I was informed from the ground that the target had begun to move and had left the zone of radar detection for about a minute and a half. So, I had only to perform my test mission: to fire from the gun a volley of all the three hundred shells. And that was all.

All of my fellow-pilots from the Aviation Research Institute stated unanimously that it had been a usual weather balloon. Generally speaking, I did also share this opinion. But there remained, however, some pieces of doubt...

First, the shape of this object was unusual: a sphere above and a truncated cone below. If it were a stratospheric balloon, it must have been much bigger. Second, both during my first and second runs, the object very dynamically changed its position. Besides, when I began my take-off and the unidentified object moved away, it had covered a distance of more than 300 kilometers in a minute and a half. Such a speed, 12,000 kilometers per hour, is unattainable for terrestrial aircraft.

A NEW BOOK ON SOVIET UFOLOGY

Mikhail Fedorovskiy

Paul Stonehill. *The Soviet UFO Files: Paranormal Encounters Behind the Iron Curtain.* CLB International, Quadrillion Publishing Ltd., Godalming, Surrey, England, 1998. Hardcover, 124 pages, n.p., ISBN 1-85833-858-1.

Frankly speaking, *The Soviet UFO Files* scarcely deserves a review in this *Bulletin*. By no means can the book be called a scientific or scholarly work, gravitating rather to the "yellowish" end of the spectrum of ufological publications. There are, however, at least two reasons justifying the effort: first, very few books on Soviet ufology have been published up to now in the West and, second, Paul Stonehill has a complete command of Russian, being therefore able to read the source materials in the original and having stable contacts with Russian ufologists.

The book is lavishly illustrated and obviously meant mainly for lay readers interested in the UFO problem, as well as — to a degree — for Western ufologists wishing to acquaint themselves with the former Soviet (now Russian, Ukrainian, etc.) ufology.

The author of the book — Paul Stonehill — was born in the USSR, emigrating to the USA in 1973. Since 1980 he has become involved in ufological studies, and in 1991 founded the Russian Ufology Research Center. The book is based on materials collected and analyzed by the author over the years he has been engaged in this field of activities.

The book is organized into six chapters — "Ancient Russian Mysteries", "Stalin, Khrushchev and the UFOs", "Soviet Military Observations", "The Darkest Secrets", "UFOs at the End of the Soviet Union", and "UFOs After 1991". There are also a very sketchy map of the "UFO hotspots" on the territory of the former Soviet Union, a list of the CIS ufological organizations and some individuals involved in ufological researches, and an index. There is, unfortunately, no list of references (although from time to time these can be met in the text).

The main advantage of the book under review over some of its predecessors is the complete lack of fantastic pseudo-ufological stories invented by the author himself. It does not mean there are in the book no fantastic stories at all — quite the contrary! — but those presented in the text are, as a rule, of purely (post-) Soviet origin.

As the best chapters one should note the "Ancient Russian Mysteries" (pp. 13–25), "Soviet Military Observations" (pp. 42–59), and the section "The KGB UFO Files" (pp. 74–79) of the chapter "The Darkest Secrets". In the first of these chapters Stonehill describes, among other things, the so-called "Robozero miracle" (dated back to 1663). Although this case (studied some 30 years ago by Yuriy Roscius) has been more than once mentioned in various European and American ufological publications, it is certainly worthy of consideration, being one of very few fully reliable ancient UFO reports. It is a pity, though, that there are no references again and the *Archeographical* Commission (that published the document in 1842) has turned into the *Archeological* one.

The chapter "Soviet Military Observations" has also been written rather carefully. It is mainly based on publications in Soviet newspapers and ufological periodicals of the late 1980-s — early 1990-s, in particular on interviews of high-ranking military authorities. Paul Stonehill does not attempt to go far beyond this information, just reproducing it in plain English. Indeed, the information itself is of much interest and persuasiveness. It convincingly demonstrates that the Russian military are fully confident that the UFO phenomenon is no fancy. They are not inclined at all to reduce it to optical phenomena accompanying rocket launches and other large-scale technical experiments. Especially interesting seems to be the information supplied by Colonel (ret.) Gherman Kolchin with reference to Colonel-General Sapkov that UFOs have been more than once observed by the officers of the Kapustin Yar testing range (p. 51).

Section "The KGB UFO Files" (pp. 74–79) also leaves a good impression on the reader by the authenticity of the materials presented. It contains some UFO reports sent in various years to the Committee of State Security of the USSR and given in 1991 to Pavel Popovich, former cosmonaut and President of the All-Union Ufological Association. True enough, there are in the materials no startling revelations or photographs of "dead alien bodies"; these are just, so to speak, routine UFO reports. But at least they are genuine and informative.

It should be pointed out that first-hand reports about UFO observations obtained by the author directly from the witnesses are in the book few and far between, but those presented are certainly not devoid of interest. Thus, Veniamin Dodin, a writer and lecturer, observed in a clear night of June 1953 at the Ishimba River, Krasnoyarsk Territory of Siberia, a cylinder-shaped UFO. "Flat drum-like bodies" separated from the cylinder and rapidly ascended upward (p. 31). This observation is certainly suggestive of the "cloud cigars" that were a prominent part of the UFO phenomenon of the 1950-s...

It is with enough restraint and healthy skepticism that Paul Stonehill expounds the cases of the "Height 611" (the so-called "Dalnegorsk crash"), the "M-zone" (one of the soap-bubbles of the Soviet pop-ufology of the late 1980-s), as well as the enigmatic death of a group of tourists in the Ural Mountains in February 1959 — somewhat vaguely mentioning a possibility of secret military tests (apparently, that was the case indeed).

By and large, while the book contains data of interest, there is in it a great deal of material that will irritate the serious reader. The main negative feature of *The Soviet UFO Files* is common practically to all (quasi-) ufological publications both in the West and in the East. Their authors take stories lacking any proofs of authenticity except for the bare word, as something close to Holy Scripture. Of course, some unproved stories may after all turn out true. But one of the central principles of computer science — "garbage in — garbage out" — demonstrates itself in the field of ufology very evidently. Trying to find even a small piece of hard knowledge about UFOs, we must, first of all, separate the reliable from the unreliable, let alone the obvious rubbish.

In this sense, a great part of the UFO (mis)information presented in *The Soviet UFO Files* can safely be thrown away into a waste-basket. The "three brown-skinned beings with slanted bright eyes" observed by cosmonauts Vladimir Kovalyonok and Victor Savinykh from the *Salyut-6* space station (p. 66), along with numerous crashed and recovered alien spaceships, are just pseudo-ufological phantoms. In fact, the story about the "brown-skinned beings" goes back to an article by Henry Gris published in *The National Enquirer* in December 1984.

Equally unfounded (to put it mildly) are the author's expatiations about the "nameless Soviet cosmonauts" who supposedly died in orbital flights, as well as on the Moon. Referring to a Vadim Petrov, "an ex-KGB officer", Paul Stonehill states that the *Lunokhods* (Soviet automatic moon-rovers that explored the surface of the Moon in 1970–1973) were guided by kamikaze cosmonauts. "Apparently, the lateral shots of the Lunokhod were made by the test-cosmonauts. The volunteers were heroes who guided the station to the moon and carried out the program projects. Their death was a tragic episode in the history of Soviet space exploration" (p. 64).

This is evident nonsense to any person even minimally familiar with the *Lunokhod* project and with space technology in general. In fact, both *Lunokhod-1* and *Lunokhod-2* were remotely controlled from the earth, which is no technical miracle at all. It is much more difficult (and more expensive) to send a human being to the Moon even, so to speak, on a one-way trip, than to make an effective system of remote control.

The disintegration of the USSR has given impetus to the origination of new myths about "certain files from the secret police" that "found their way abroad, in particular to the CIA" (p. 80). Everything is possible, of course, but when the Ukrainian newspaper *Vechirniy Ternopil* publishes a report "based on Canadian sources" about 23 Soviet soldiers who were turned into stone poles by "five short humanoids with large heads and large black eyes" after their saucer-shaped spaceship was brought down by a surface-to-air missile, and Paul Stonehill takes this story practically at face value — this does cast an unpleasant shadow upon other materials presented in the book as well.

While reading the text, one constantly come across simple factual errors. Here are just a few of them:

Page 39. The famous Arctic flier B. (in fact — V.) Akkuratov did not see in 1956 a "cigar-shaped" UFO. Actually, he described the object as a *lenticular*-shaped one.

Pages 57, 58, and the index. The Ukrainian ufologist V. Kratokhvil appears one time as Kratokhvil and another time as Krahovil.

Page 65. Caption: "The launch of Soyuz T-4 from Plesetsk." Sorry, but all *Soyuz* spacecraft were launched from Baykonur.

Page 103. "Russian city" Odessa. Even in 1989–1990 Odessa was a Ukrainian city.

Etc., etc., etc.

It is quite obvious that the criteria normal for scientific publications cannot be applied to *The Soviet UFO Files*. The book has nothing to do with science — which is not an accusation at all, just a description of the real state of affairs. When compared with such an anthology of fiction as, say, *The New Soviet Psychic Discoveries* by H. Gris and W. Dick, *The Soviet UFO Files* does have its own merits. At least the author tried to do his best and his effort was not completely in vain. However, the final conclusion can certainly be only negative: the book cannot be recommended as a reference work on, neither as a good introduction to, Soviet/post-Soviet ufology. It can be of some use to the knowing reader, but hardly to the innocent. At the same time, the book is a not-so-bad mirror in which ufologists from the CIS countries can see themselves, their achievements and (alas, even primarily) losses. Many fantastic stories uncritically taken by Paul Stonehill have in fact originated in the womb of the post-Soviet ufological community and not among irresponsible newspaper reporters.

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